

## REMARKS

### I. Introduction

In response to the pending Office Action, Applicant wish to thank the Examiner for the indication of allowability of claims 1, 4, 7, 8, 11, 14, 15, 18, 21, 22 and 27-30, and the indication of allowable subject matter being recited by claims 25 and 26. Applicants respectfully request reconsideration of the pending rejection of claims 23 and 24 for the reasons set forth below.

### II. The Rejection Of Claims 23 And 24 Under 35 U.S.C. § 102

Claims 23 and 24 were rejected under 35 U.S.C. § 102(e) as being unpatentable in view of USP No. 5,807,649 to Liebmann. In response to the pending rejection, Applicant has amended claim 23 so as to further clarify the intended subject matter of the present invention. Applicant respectfully submits that the claims 23 and 24, as amended, are clearly patentable over Liebmann for at least the following reasons.

As recited by claim 23, the plurality of resolvable features and the non-resolvable optical proximity correction (OPC) feature are both formed in the same mask (e.g., the OPC feature is disposed adjacent or in between the resolvable features). Furthermore, the non-resolvable optical proximity correction feature (i.e., gray bar) has a transmission coefficient in the range of greater than 0% and less than 100%. As detailed in the specification, the transmission coefficient of the non-resolvable correction feature is variable so as to allow for control of the magnitude of the diffraction orders received by the collection lens, thereby allowing for optimization of the imaging process.

Turning to Liebmann, Liebmann discloses the use of phase-edges to improve imaging. The phase-edges disclosed in both the background section of Liebmann and the alleged invention of Liebmann are initially printed on the wafer and are subsequently removed utilizing a second

trim mask. The alleged novelty of Liebmann is a new “trim” mask design. The foregoing is made clear by reference to, for example, col. 4, lines 1-6 which states that the trim mask functions to remove the residual phase edge images without effecting the desired features.

Thus, Liebmann fails to disclose a resolvable feature and a non-resolvable OPC feature being formed in the same mask (the phase-edge is not non-resolvable, as the trim mask is necessary to subsequently remove the phase-edge from the wafer). Moreover, Liebmann does not disclose adjusting the adjusting the width, position and transmission coefficient of the non-resolvable optical proximity correction feature so as to maximize the process window for printing said plurality of resolvable features. The adjustments being made in Liebmann set forth on col. 7, line 42 to col. 8, line 3 as noted in the pending rejection correspond to a method of forming the trim mask. For example, in one step, the original pattern is expanded to provide a starting point in the trim mask design. However, as noted above, the adjustments are being made to the trim mask, not a non-resolvable OPC feature contained in the mask comprising the features to be imaged. Moreover, even assuming *arguendo* that the Liebmann disclosed adjusting the width of the non-resolvable features in the mask, it does not appear that Liebmann discloses any such features having a transmission coefficient in the range of greater than 0% to less than 100%, as recited by claim 23. As such, for at least these reasons, Liebmann does not disclose or suggest each element of the present invention as recited by claim 23.

Accordingly, as anticipation under 35 U.S.C. § 102 requires that each element of the claim in issue be found, either expressly described or under principles of inherency, in a single prior art reference, *Kalman v. Kimberly-Clark Corp.*, 713 F.2d 760, 218 USPQ 781 (Fed. Cir. 1983), and *Liebmann, at a minimum, does not disclose or suggest the use of a non-resolvable optical proximity correction feature formed in the same mask as the features to be imaged,*

where the non-resolvable optical proximity correction feature has a transmission coefficient in the range of greater than 0% and less than 100%, Liebmann does not anticipate claim 23, or any claim dependent thereon.

**III. All Dependent Claims Are Allowable Because The Independent Claims From Which They Depend Are Allowable**

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Under Federal Circuit guidelines, a dependent claim is nonobvious if the independent claim upon which it depends is allowable because all the limitations of the independent claim are contained in the dependent claims, *Hartness International Inc. v. Simplimatic Engineering Co.*, 819 F.2d at 1100, 1108 (Fed. Cir. 1987). Accordingly, as all independent claims are patentable for the reasons set forth above, it is respectfully submitted that all pending dependent claims are also in condition for allowance.

**IV. Request For Notice Of Allowance**

Having fully responded to all matters raised in the Office Action, Applicants submit that all claims are in condition for allowance, an indication for which is respectfully solicited.

If there are any outstanding issues that might be resolved by an interview or an Examiner's amendment, the Examiner is requested to call Applicants' attorney at the telephone number shown below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

McDERMOTT, WILL & EMERY

Date: 12/29/04

By: \_\_\_\_\_

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